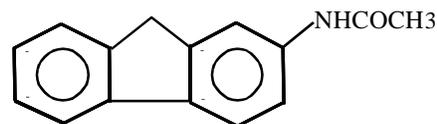


2-ACETYLAMINOFLUORENE

2-Acetylaminofluorene is a federal hazardous air pollutant and was identified as a toxic air contaminant in April 1993 under AB 2728.

CAS Registry Number: 53-96-3

Molecular Formula: C₁₅H₁₃NO



2-Acetylaminofluorene is a tan crystalline solid. It is insoluble in water but soluble in alcohols, glycols, fat solvents, ether, and acetic acid (Merck, 1989; HSDB, 1991).

Physical Properties of 2-Acetylaminofluorene

Synonyms: N-2-fluorenylacetamide; N-9H-fluoren-2-yl-acetamide; 2-fluoren-amine; acetylaminofluorene; N-flouren-2-yl acetamide

Molecular Weight:	223.26
Melting Point:	194 °C
Log Octanol/Water Partition Coefficient:	3.22 (est.)
Conversion Factor:	1 ppm = 9.13 mg/m ³

(HSDB, 1991; Merck, 1989; U.S. EPA, 1994a)

SOURCES AND EMISSIONS

A. Sources

2-Acetylaminofluorene is used as a positive control in the study of liver enzymes and the carcinogenicity and mutagenicity of aromatic amines. 2-Acetylaminofluorene is not produced in the United States and less than 20 pounds per year of it is consumed in the United States (HSDB, 1991).

B. Emissions

No emissions of 2-acetylaminofluorene from stationary sources in California were reported, based on data obtained from the Air Toxics "Hot Spots" Program (AB 2588) (ARB, 1997b).

C. Natural Occurrence

No information about the natural occurrence of 2-acetylaminofluorene was found in the readily-available literature.

AMBIENT CONCENTRATIONS

No Air Resources Board data exist for ambient concentrations of 2-acetylaminofluorene.

INDOOR SOURCES AND CONCENTRATIONS

No information about the indoor sources and concentrations of 2-acetylaminofluorene was found in the readily-available literature.

ATMOSPHERIC PERSISTENCE

If released to the atmosphere, 2-acetylaminofluorene is expected to exist in the particle phase (Atkinson, 1995). No information on the atmospheric half-life and lifetime was found in the readily-available literature.

AB 2588 RISK ASSESSMENT INFORMATION

2-Acetylaminofluorene emissions are not reported from stationary sources in California under the AB 2588 program. It is also not listed in the California Air Pollution Control Officers Association Air Toxics "Hot Spots" Program Revised 1992 Risk Assessment Guidelines as having health values (cancer or non-cancer) for use in risk assessments (CAPCOA, 1993).

HEALTH EFFECTS

Probable routes of human exposure to 2-acetylaminofluorene are inhalation and dermal contact (HSDB, 1991).

Non-Cancer: No information is available on the human non-cancer health effects of 2-acetylaminofluorene (U.S. EPA, 1994a).

The United States Environmental Protection Agency (U.S. EPA) has not established a Reference Concentration (RfC) or an oral Reference Dose (RfD) for 2-acetylaminofluorene (U.S. EPA, 1994a).

In studies where animals were exposed to a single injection of 2-acetylaminofluorene skeletal defects, cleft lips, cleft palates, and cerebral hernias were observed in the offspring of the exposed mice (U.S. EPA, 1994a).

Cancer: 2-Acetylaminofluorene administered in feed caused increased incidences of malignant tumors in a variety of organs in the rat and increased incidences of liver and urinary bladder cancers in mice (Sittig, 1991). The U.S. EPA has placed 2-acetylaminofluorene in Group B2: Probable human carcinogen (U.S. EPA, 1994a). The International Agency for Research on Cancer has not classified 2-acetylaminofluorene with respect to potential carcinogenicity (IARC, 1987a).

The State of California has determined under Proposition 65 that 2-acetylaminofluorene is a carcinogen (CCR, 1996). The inhalation potency factor that has been used as a basis for regulatory action in California is 1.3×10^{-3} (microgram per cubic meter)⁻¹ (OEHHA, 1994). In other words, the potential excess cancer risk for a person exposed over a lifetime to 1 microgram per cubic meter of 2-acetylaminofluorene is estimated to be no greater than 1,300 in 1 million. The oral potency factor that has been used as a basis for regulatory action in California is 3.8 (milligram per kilogram per day)⁻¹ (OEHHA, 1994).

